

WHAT IS CLAIMED IS:

- 1                   1.       An image-capture circuit, comprising:  
2                   a digitizer operable to receive a serial analog color signal having a  
3       predetermined sequence of color components, the digitizer having:  
4                   a plurality of channels each operable to process a respective color  
5       component; and  
6                   an analog-to-digital converter operable to sequentially receive and  
7       digitize the color components; and  
8                   a controller coupled to the digitizer and operable to couple each of the  
9       channels to the analog to digital converter in the predetermined sequence.
- 1                   2.       The image-capture circuit of claim 1, wherein the digitizer further  
2       includes a multiplexer disposed between the channels and the analog-to-digital  
3       converter, and the controller is further operable to cause the multiplexer to couple  
4       the channels to the analog-to-digital converter in the predetermined sequence.
- 1                   3.       The image-capture circuit of claim 1, wherein each input channel  
2       is operable to modify the respective color component that it processes.
- 1                   4.       The image-capture circuit of claim 3, wherein each input channel  
2       is further operable to amplify the respective color component.
- 1                   5.       The image-capture circuit of claim 3, wherein each input channel  
2       is further operable to offset the respective color component.
- 1                   6.       The image-capture circuit of claim 1, wherein the controller is  
2       further operable to control the digitizer such that the first input channel processes a  
3       first color component of the received analog-color signal, the second input channel  
4       processes a second color component of the received analog-color signal, and  
5       continuing until each color component is individually processed.
- 1                   7.       The image-capture circuit of claim 1, wherein the digitizer is  
2       operable to receive the serial analog color signal in the plurality of channels.

1           8.     The image-capture circuit of claim 1, wherein the digitizer is  
2 further operable to receive a parallel analog-color signal having color components,  
3 each channel of the digitizer being operable to receive a respective color component.

1           9.     The image-capture circuit of claim 1, wherein the controller and  
2 the digitizer are formed on a single chip.

1           10.    An image-capture circuit, comprising:  
2               a digitizer operable to receive a serial analog color signal having a  
3 predetermined sequence of color components, the digitizer having:

4               a plurality of signal modification channels, one of the channels  
5 operable to sequentially modify each of the color components according to a  
6 corresponding modification parameter; and

7               an analog-to-digital converter operable to sequentially receive and  
8 digitize the modified color components; and

9               a controller coupled to the digitizer and operable to sequentially update  
10 the modification parameter to correspond to the color component that the channel is  
11 modifying.

1           11.    The image-capture circuit of claim 10, wherein the modification  
2 parameter includes an amplification.

1           12.    The image-capture circuit of claim 10, wherein the modification  
2 parameter includes an offset.

1           13.    A scanner comprising:

2               a sensor head operable to generate a serial analog-color signal having  
3 a predetermined sequence of color components responsive to a scan of an image;

4               an image-capture circuit, including:

5               a digitizer operable to receive the serial analog color signal and having:

6               a plurality of channels each operable to process a respective color  
7 component; and

8 an analog-to-digital converter operable to sequentially receive and  
9 digitize the color components; and

10 a controller coupled to the digitizer and operable to couple each of the  
11 channels to the analog to digital converter in the predetermined sequence.

1 14. The scanner of claim 13, wherein each input channel is  
2 coupled to the serial analog-color signal.

1 15. The scanner of claim 13, wherein the controller is further  
2 operable to synchronize generation of a first color component by the sensor head  
3 with the processing of the first color component by a first channel, generation of a  
4 second color component by the sensor head with the processing of the second color  
5 by a second channel, and continuing until each color component has been  
6 generated and processed by a different channel

1 16. The scanner of claim 13, wherein the color components include  
2 red, green, and blue.

1 17. The scanner of claim 13, wherein the scan head is a CIS type.

1 18. A scanner comprising:

2 a sensor head operable to generate a serial analog-color signal having  
3 a predetermined sequence of color components responsive to a scan of an image;

4 an image-capture circuit, including:

5 a digitizer operable to receive the serial analog color signal and having:

6 a plurality of signal modification channels, one of the channels  
7 operable to sequentially modify each of the color components according to a  
8 corresponding modification parameter; and

9 an analog-to-digital converter operable to sequentially receive and  
10 digitize the modified color components; and

11 a controller coupled to the digitizer and operable to sequentially update  
12 the modification parameter to correspond to the color component that the channel is  
13 modifying.

1                    19.        A method for digitizing a serial analog-color signal having a  
2        predetermined sequence of multiple color components, the method comprising;  
3                    modifying a first one of the components with a first channel and  
4        digitizing the modified component during a first time period; and  
5                    modifying a second one of the components with a second channel and  
6        digitizing the modified component during a second time period that is separate from  
7        the first time period.

1                    20.        A method for digitizing a serial analog-color signal having a  
2        predetermined sequence of multiple color components, the method comprising;  
3                    setting a modification parameter of a selected one of a plurality of  
4        channels to first predetermined level, modifying a first one of the color components  
5        with the channel, and digitizing the modified first component during a first time  
6        period; and  
7                    setting the modification parameter of the channel to a second  
8        predetermined level, modifying a second one of the color components with the  
9        channel, and digitizing the modified second component during a second period of  
10       time that is separate from the first time.